

example of a video camera-motion layer. As an option, the camera motion parameters of the video camera-motion layer can be the same as or different from the camera motion parameters of the original camera-motion layers. As a specific example of such a video camera-motion layer, consider an original video sequence depicting a scene passing by the storefront of a T.V. repair shop. The video camera-motion layer can be located in front of the monitor of one of the T.V. sets in the T.V. repair shop window. Foreground objects in the video can obscure the video camera-motion layer by moving in front of the T.V. set.

[79] In block 36, an animation sequence is added to a camera-motion layer. An animation, such as a Flash or an animated GIF, is inserted and maintains the motion characteristics of the camera via the camera motion parameters of the decomposed original video sequence. This is an example of an animation camera-motion layer. As an option, the camera motion parameters of the animation camera-motion layer can be the same as or different from the camera motion parameters of the original camera-motion layers. As a specific example, a motion banner can be inserted in a camera-motion layer. Motion banners are currently used, for example, on static web pages. With the invention, a motion banner can be inserted in a camera-motion layer depicting the background, and the motion banner in the composite modified video sequence appears to pan, zoom, and tilt with the camera. Further, foreground objects, such as people depicted using fixed-frame layers, can obscure the motion banner as they pass in front of the motion banner.

[80] In block 37, a three-dimensional (3D) object is added to a camera-motion layer. As a specific example, consider the interior of a large train station (e.g., a panorama of a large open space) as the original camera-motion layer. A 3D object, comprising a 3D model and texture, of a statue of a President can be added to the station. When the object-based video

compositor 7 composes the modified video sequence, camera motion parameters can be applied to the 3D object such that when the composite modified video sequence is viewed, the camera movement appears to rotate around the statue as the camera pans across the interior of the station.

5 [81] In block 38, one or more user-activated areas are added to a camera-motion layer. A user-activated area is an area of a camera-motion layer that initiates an action upon activation by a user. Examples of an action initiated by a user-activated area include: accessing a web site; hyperlinking to a designated URL (uniform resource locator); opening a window; playing an audio source; playing a video source; saving data; sending data to a web site; saving a cookie; and sending an e-mail. Examples of an activation by a user for a user-activated area include: passing a cursor over the user-activated area using a user input device, such as a mouse, a pointer, or a keyboard; clicking a mouse as a cursor passes over the user-activated area; detecting eye motion of a user as the user apparently views the user-activated area; and detecting a selection or possible selection of the user-activated area by the user. The user-activated area can be a portion of a camera-motion layer or the entire camera-motion layer. A camera-motion layer can have one or more user-activated areas, and each such user-activated area can have the same or different actions and/or can be activated by the same or different activations by a user. As a specific example, consider a video scene of a hotel lobby with the name of the hotel on a wall behind the registration desk. A first user-activated area can be added over the area around the name of the hotel and includes a hyperlink to the web site for the hotel. Further, a machine for dispensing canned soda can be inserted into the video scene of the hotel lobby, as in block 31. A second user-activated area can be added over the machine for dispensing canned soda and includes a hyperlink to the web site for the producer of the canned soda.

[82] In block 39, one or more on/off times are modified for a camera-motion layer. An on/off time indicates when in the decomposed video sequence a camera-motion layer is included in the composite video sequence. Examples of modifying on/off times include the following: an object that disappears; an object that appears; an object that disappears then reappears; an objects
5 that appears then disappears; and an object that is visible throughout the entire composite video sequence (i.e., the object is not turned off). As a specific example, the furniture in a video scene of a hotel lobby can appear suddenly to populate the hotel lobby.

[83] In block 40, the opaqueness of a camera-motion layer is modified. The inverse of opaqueness is transparency. Opaqueness (or transparency) can vary from opaque to transparent. As an example, a corporate logo can be placed in a video sequence as a camera-motion layer and have a slight opaqueness associated with it so that the corporate logo does not entirely occlude the underlying scene.

[84] In block 41, one or more fade-in/fade-out parameters are modified for a camera-motion layer. The fade-in/fade-out parameters are a combination of the on/off times from block
15 37 and the opaqueness from block 39. Examples of modifying fade-in/fade-out parameters include the following: an object that slowly disappears; an object that rapidly appears; an object that rapidly disappears then slowly reappears; an objects that slowly appears then slowly disappears; and an object that is scene throughout the entire composite video sequence. As an example, an advertisement on a billboard in a video scene can appear to fade in and fade out of
20 the composite modified video scene.

[85] In block 42, the order parameter of a camera-motion layer is modified. The order parameter defines the placement of the associated camera-motion layer with respect to the other camera-motion layers and the fixed-framed layers in the decomposed video sequence. With this